

# CH403-15 Synthetic Chemistry II (Metallo-organic)

**23/24**

**Department**

Chemistry

**Level**

Undergraduate Level 4

**Module leader**

Adrian Chaplin

**Credit value**

15

**Module duration**

10 weeks

**Assessment**

20% coursework, 80% exam

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

N/A

[Module web page](#)

### Module aims

This module is designed to develop student awareness of current problems and directions at the forefront of metallo-organic chemistry. Participants will have the opportunity to critically evaluate selected research literature in this area. The module is designed to allow students to be original in the application of their knowledge to the solution of research-based problems.

This will be achieved by a range of teaching methods including directed reading, workshops/problems classes, and set exercises. Students will be expected to undertake a significant amount of student centred learning around the subject, which will be directed appropriately during the academic contact hours.

Bookable contact hours will be set aside for students who require additional guidance with directed reading and student-centred learning, to discuss their problems with the module leader as

individuals or in groups.

Depending on nature of contemporary research and the particular research interests of staff members, two or more of the following areas will be addressed:; the structure, bonding and reactivity of organometallic complexes; synthetic applications of organometallic complexes; homogenous transition metal catalysis; small molecule activation;,, the synthesis and applications of chiral metal complexes;,, soluble metal-organic cages and extended metal-organic frameworks.

Students will be expected to demonstrate their abilities by critical evaluation of recent published material in one of the areas of study. This will be achieved by the submission of a poster. Students will also undertake a written examination that will test both their critical thinking around the subject as well as their ability to apply their knowledge to original problems.

## **Outline syllabus**

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

By definition this module will focus on recent research and the specific examples and literature discussed may differ on a year-to-year basis.

The module will be structured into two themed sets of 5 lectures, with each accompanied by a corresponding suite of dedicated directed reading from the scientific literature and 1 workshop. The classes will provide the academic and conceptual framework for the student centred critical analysis of the selected literature. Suitable guidance will also be provided.

Bookable contact hours will be set aside for students who require additional guidance with directed reading and student-centred learning, to discuss their problems with the module leader as individuals or in groups.

## **Learning outcomes**

By the end of the module, students should be able to:

- Subject knowledge to an appropriate level.
- Awareness and understanding of contemporary metallo-organic chemistry and its context
- Ability to interpret and evaluate contemporary research work

## **Indicative reading list**

Because this is a research module, much of the recommended and essential reading will be recently published research articles and thus may change over the years.

[View reading list on Talis Aspire](#)

## **Subject specific skills**

Critical thinking

Information literacy and research skills

## Transferable skills

Critical thinking  
Information literacy and research skills

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## Study

### Study time

Type	Required
Lectures	10 sessions of 1 hour (7%)
Other activity	8 hours (5%)
Private study	132 hours (88%)
Total	150 hours

### Private study description

Includes: critical analysis of directed reading articles and lecture materials, preparation for the poster presentation.

### Other activity description

2 x 2 hour problem-based workshops  
4 hours bookable academic contact

## Costs

No further costs have been identified for this module.

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## Assessment

You do not need to pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

### Assessment group D5

	Weighting	Study time
Poster Presentation	20%	
1 page submission: there will not actually be a poster session.		

	<b>Weighting</b>	<b>Study time</b>
In-person Examination	80%	
<ul style="list-style-type: none"> <li>• Answerbook Pink (12 page)</li> <li>• Graph paper</li> <li>• Periodic Tables</li> <li>• Students may use a calculator</li> </ul>		

## Feedback on assessment

Feedback comments and grade on assessed work (poster presentation) provided on marksheet. General exam feedback provided at cohort level.

[Past exam papers for CH403](#)

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## Availability

### Pre-requisites

To take this module, you must have passed:

- Any of
  - [CH3F0-15 Advanced Inorganic Chemistry and Laboratory](#)
  - [CH3F3-30 Advanced Chemistry \(Organic, Inorganic and Physical\)](#)

## Courses

This module is Optional for:

- Year 1 of TCHA-F1PB MSc in Chemistry with Scientific Writing
- TCHA-F1PE Postgraduate Taught Scientific Research and Communication
  - Year 1 of F1PE Scientific Research and Communication
  - Year 2 of F1PE Scientific Research and Communication
- UCHA-F110 Undergraduate Master of Chemistry (with Industrial Placement)
  - Year 4 of F110 MChem Chemistry (with Industrial Placement)
  - Year 4 of F112 MChem Chemistry with Medicinal Chemistry with Industrial Placement
- Year 5 of UCHA-F107 Undergraduate Master of Chemistry (with Intercolated Year)
- UCHA-F109 Undergraduate Master of Chemistry (with International Placement)
  - Year 4 of F109 MChem Chemistry (with International Placement)
  - Year 4 of F111 MChem Chemistry with Medicinal Chemistry (with International Placement)
- UCHA-4M Undergraduate Master of Chemistry Variants
  - Year 4 of F105 Chemistry
  - Year 4 of F110 MChem Chemistry (with Industrial Placement)

- Year 4 of F109 MChem Chemistry (with International Placement)
- Year 4 of F126 MChem Chemistry with Med Chem (with Prof Exp)
- Year 4 of F125 MChem Chemistry with Medicinal Chemistry
- Year 4 of F106 MChem Chemistry with Professional Experience
- Year 5 of UCHA-F127 Undergraduate Master of Chemistry with Medicinal Chemistry (with Intercalated Year)